# METEOROLOGICAL OFFICE

# NEWSLETTER FOR CLIMATOLOGICAL OBSERVERS IN ENGLAND AND WALES

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# ENGLAND AND WALES

No. 11

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Produced by:

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Observational Requirements
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OBSERVERS NEWSLETTER OCTOBER 1983

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## EDITORIAL

If you think that other observers would be interested to read of your daily routine or of some particular aspect of your work, do let us know. Mr Findlay, the observer at Widdybank Fell did just that and his interesting letter is on pages 8,9.

We like to know, too, if there have been any changes at your station. Change of site of the meteorological enclosure is of course especially important and most observers are aware that we would want to know if such changes take place. But you may not realise that we are always pleased to learn of other, perhaps more mundane changes which occur, particularly in your address or telephone number, or changes in observing staff.

Much of our information concerning the voluntary network is up-dated from reports supplied by our staff on their biennial visits to the station, but we frequently supplement this through correspondence which we may have. Printed letter headings for instance often give details of a new address or telephone number that we weren't aware of. Telephone dialling codes seem especially prone to change of recent months and it is a great help if you inform us when the codes are changed.

The new scheme of observers awards has proved very successful and we want to ensure that all those observers who qualify have been included. Remember the qualifying period is 15 years or more so if you or anyone at the station you know qualify, please write to us giving full details. The latest list of awards for 1983 will be found in this Newsletter.

Observers training courses for 1984 have been arranged for the following dates:

12-16 March 1984
11-15 June 1984
2-6 July 1984

An additional course in September 1984 will be notified later. Full details and application forms to attend these courses will be sent to all stations later this year.

W M Longworth

## STOP PRESS NEWS:

Firstly our Branch has undergone a minor administrative re-organisation. We are now to be known as Met O 1e(Climat) instead of Met O 1c3. No other change is needed - our address and telephone numbers remain the same.

You may be pleased to hear that both Dizzy Allen and George Swift were successful on a recent promotion board to Higher Scientific Officer. Dizzy will be staying in her present job and take on extra responsibility for inspections and George will move over to another post within Met O 1 dealing with automatic weather stations. We will therefore need a new person to take over George's old post - details will be given in the next Newsletter.

W M L

HQ NEWS

## Director-General of the Meteorological Office

Sir John Mason C.B., D.Sc., F.R.S. retires on 1 October 1983 and is succeeded as Director-General of the Meteorological Office by Dr J.T. Houghton C.B.E., D.Phil. F.R.S.

Sir John Mason was appointed Director-General of the Meteorological Office on 1 October 1965. He was born in Norfolk and received his early education at Fakenham Grammar School. During the war he served as an officer in the Radar Branch of the Royal Air Force. He graduated with first class honours in Physics at the University of Nottingham in 1947 and the year after joined the Department of Meteorology at the Imperial College of Science and Technology, University of London. In 1960 he was appointed Professor of Cloud Physics at Imperial College. He was elected Fellow of the Royal Society in 1965 and was created a Knight Bachelor in the Birthday Honours List of 1979.

Dr John Houghton was educated at Rhyl Grammar School and Jesus College, Oxford. He has spent most of his professional life at the University of Oxford and has been a Fellow of Jesus College since 1960. In 1976 he was appointed Professor of Atmospheric Physics in the University of Oxford and has been Deputy Director of the Rutherford Appleton Laboratory at Chilton since 1979.

Whilst at Oxford he built up a research group which, in collaboration with the Rutherford-Appleton Laboratory, has been extremely successful in applying advanced space technology to a series of sophisticated instruments flown on meteorological satellites launched by the USA.

Dr Houghton served as President of the Royal Meteorological Society from 1976 to 1978, he is married with one son and one daughter. His hobbies include sailing, walking and gardening.

(Editor: We are indebted to Capt C R Downes of Met O 1a for providing the above notes which will be published in the Marine Observer for October 1983).

Concluding the extracts from Mr R J Ogden's article Co-operating Observers and the Climatological Network reproduced from the Meteorological Magazine, 197, 1978, pp 209-218.

## THE CO-OPERATING OBSERVERS

Meteorological offices are manned by professional staff whose job it is to make weather observations, and the observers at Auxiliary stations are for the most part on duty for other purposes and also receive honoraria for their climatological work. By contrast, the co-operating observers as a class are sustained largely by their own interest in a task to which they have voluntarily put their hands. Admittedly, observers at stations which are sponsored by an Authority or Institution fit their meteorological work in with their other duties, and in some cases receive modest extra payments; but many of them carry out work far beyond that strictly paid for by their employers. Private observers, moreover, work entirely in their own time and in most cases purchase their own instruments; their motivation can only be that provided by a deep personal interest and a spirit of service. Their dedication often puts the professional to shame; more than one private observer has offered to move his home to a place where there is a serious gap in the Network.

All good observers take a pride in their work, and there is perhaps a special satisfaction in having recorded an extreme of some sort. Of all the elements observed, it seems to be sunshine which attracts particular devotion, and the hope of recording as much sunshine as possible has led to sunshine recorders being sited in some very inaccessible places on the roofs of buildings. At Penzance for example, access to the recorder involves scrambling through the mechanism of a large public clock, avoiding moving cogwheels, turning rods and suspended weights (interference with which would stop the clock), in order to emerge from the tower on to a roof. There is, however, another reason for the popularity of the inaccessible, namely security, because sunshine spheres are now very expensive items to replace. Some years ago, during the summer seasons, sunshine spheres were lost with monotonous regularity from the enclosure at Rhyl which was located near a large amusement park; most of these found their way into the tents of gypsy fortune tellers from whom they were eventually recovered by the Police. Three examples, all involving sunshine measurement, will serve to illustrate the lengths to which a dedicated observer will go in carrying out his self-imposed duty.

The station at Botwnnog in Gwynedd is located at the local school, and under the direction of Mr R. L. Jones, then Physics master, the enclosure was always impeccable with grass of bowling-green quality. When a sunshine recorder was to be installed, a firm support was needed and it was decided that nothing less than solid rock would be satisfactory; a massive stone about 6 feet high and weighing several tons was dragged on a flat wooden trolley by teams of boys over 3 miles from a local quarry.

The saddest event in the history of the Network occurred at Teignmouth in 1963. The sunshine recorder was sited at the end of the pier which was under repair at the time; a 60 foot length of decking had been removed, and the sole access was by means of a temporary gangway of single width plank with only a hand rope for support. Whilst trying to reach the pier end to change the card during a severe gale, Mr Rossiter the observer slipped or was blown into the sea and drowned.

At Shanklin, the sunshine recorder is located on the roof of the municipal theatre, and access is by means of a 30 foot vertical iron rung ladder to a catwalk above the stage, then via another ladder and a trap door to the roof. The observer Mr Hoare, aged 82 and a sufferer from chronic arthritis, had the misfortune one evening in 1977 to fall whilst on the catwalk and dislocated his shoulder. To descend the long vertical ladder was clearly impossible, but he managed to climb single handed up to the roof where he changed the sun card and eventually managed to attract the attention of a passer-by in the street below. On arrival, the Fire Brigade ladder was found...

to be too short to reach the roof, so he was finally rescued on a stretcher by Naval helicopter and taken to hospital for attention. After this episode he was persuaded to retire, but sent to the Office a characteristic note complaining that, unnecessarily, 'a youngish man had now been thrown on the scrap heap'.

End of EXTRACTS
from Mr R J Ogdens article

## News of Stations

We are pleased to announce the commencement of the following two new climatological stations: Batchley, near Bromyard, Herefordshire and Cornmeadow, near Worcester. Brighton Health Resort has recommenced having had a break in recording over the last two years or so. We welcome these stations to the network and are sorry to lose the services of the following stations-Wincanton, Somerset, Derby and Nottingham (Castle) all of whom have contributed monthly returns over a long period.

Two Water Authority stations have closed recently: Cwmystradllyn, Gwynedd, run by the Welsh Water Authority and the Severn Trent Water Authority station at Hampton Loade, Shropshire.

The observer at Eaglesfield, Cumbria, has been obliged to move house and has re-established his climatological station at Stainburn, near Workington, Cumbria.

It was with regret that we learnt of the death of Mr R A Tyssen-Gee who ran the climatological station at Hampstead, for many years. Mr Tyssen-Gee was a keen climatologist and had seen service in Iceland with the Meteorological Office during the Second World War.

## Awards to Observers, 1983

The following observers have received an Award this year of a Barograph.

| Observer | Station | Period of Service |
|---|---|---|
| W B Evans | Gogerddan (Dyfed) | 30 years |
| T Bridge | Lyonshall (Hereford) | 30 years |
| W D Burrell | Newport (Salop) | 30 years |
| W T Gooch | East Bergholt (Suffolk) | 30 years |

Book awards have been made to those observers listed below:-

| | | |
|---|---|---|
| H W Lawson | Aigburth (Liverpool) | 16 years |
| S E H Martin | Ashover (Derby) | 16 years |
| G Hilton | Morley St Botolph (Norfolk) | 16 years |
| P L Cannington | Ness Gardens, Wirral (Cheshire) | 16 years |
| H A Baker | Wisley (Surrey) | 16 years |
| D M Alvey | Warsop (Notts) | 16 years |
| J P Wallis | St Albans (Herts) | 15 years |
| J D G Parker | Shirburn (Oxon) | 15 years |
| D S B Fellowes | Wingerworth (Derby) | 15 years |
| W T Jones | Carmarthen (Dyfed) | 19 years |
| R Ellis | Lincoln (Lincs) | 16 years |

Three presentations of the book award were made to observers in Northern Ireland and six to observers in Scotland.

THE FOURTH EXTRACT FROM AN INTRODUCTION TO THE WORK OF THE METEOROLOGICAL OFFICE, BRACKNELL

The Central Forecasting Office

The Central Forecasting Office (CFO) is one of 20 Regional Forecast Centres in the world. The principle responsibilities are: 1. The provision of guidance (charts and bulletins) for use by all Meteorological Office outstations; 2. The preparation of forecasts for radio, television and the Press, forecasts and warnings for shipping, warnings of hazardous weather over land and worldwide forecasts for Civil Aviation; 3. An international commitment to provide basic analyses and forecasts for the Northeast Atlantic and Northwest Europe for use by meteorological services of other nations.

Analysis and forecasting continues throughout the 24 hours. Hourly charts of surface weather over the British Isles are plotted; every 3 hours the weather over the whole of Europe and the North Atlantic is plotted and at 12-hourly intervals a chart covering the whole globe is produced. Midnight and midday (GMT) upper air observations are displayed on charts and graphs; other upper air reports are incorporated as available. Many of the charts are plotted automatically by computer-controlled equipment although hand plotting is also used. Analysis of the charts involves close scrutiny of every item of data. Surface fronts are identified and drawn in, isobars (lines of equal pressure) are drawn to define both the distribution of pressure and the general wind flow. Isotherms, areas of significant weather or cloud, precipitation areas, etc. are delineated as the situation demands. Satellite images are often used to help locate fronts and other areas of significant cloud. On upper air charts contours of the height of the pressure surface are drawn: these, like isobars, define the wind flow at the level of the chart. The upper air graphs can be analysed in many ways. The results give assessments of cloud type and thickness, precipitation character and amount, icing and turbulence in cloud,

temperature variations at ground level, fog formation and clearance, wind speed and gustiness, clear air turbulence over mountains and many more elements.

Forecasting the weather involves many techniques. The computer provides the basic framework - global patterns of air movement, temperature and pressure at regular intervals out to 6 days ahead and more detailed forecasts (including rainfall) out to 36 hours ahead for the European area. The human forecaster interprets the computer output and deduces the consequences in weather terms of the predicted patterns using empirical rules based on the mathematics and physics of meteorology.

Within this framework forecasting the weather continues unabated. The techniques used range from simple projections of the movement displayed on current analyses for short periods ahead to quite complex calculations or graphical methods to predict in detail a single element for a small area for several hours or days ahead. In all forecasts the broad scale predictions from the Computer are integrated with local and non-meteorological factors, including topography, time of day (which determines the available solar energy), and proximity of the sea. The specific needs of the user often determine the content and format of the forecast. Contrasting examples are the significant weather forecast charts used by Civil Aviation, on which only those elements having a direct bearing on a flight are defined - icing, turbulence, thunder and hail storms and thick cloud, and the forecast of wind and sea state in the North Sea for the oil industry. Equally contrasted are the general forecasts for dissemination through the mass media, in which all basic weather elements are dealt with, and the detailed forecasts of temperatures at selected locations provided to the Electricity and Gas generating authorities from which likely demand is assessed.

(To be concluded in our next issue)

Readers Letters

From the observer at Widdybank Fell

Widdybank Fell Climatological station

This station situated in western Durham in the northern Pennines is, at 513 metres, one of the highest in Great Britain. It was set up initially by the Nature Conservancy in 1967 to monitor the effects of the Cow Green Reservoir on the micro climate which in turn, if altered, could possibly destroy the very rare arctic/alpine flora that grow in this unique area - after fifteen years there has been no change.

There had been much controversy between industry and conservationists as to the building of the reservoir in this area with its unique geological make up (metamorphosed limestone - sugar limestone) and many rare arctic/alpine species.

The station which is in the Upper Teesdale National Nature Reserve is situated close to the nature trail (50 yards) on the sugar limestone grassland. This grassland produces a marvellous display of flora during the late spring, early summer. As the station is enclosed and sheep cannot graze there, the floral display is superb. As well as the usual limestone species there are a number of rarities. Spring gentian (Gentiana verna) only site in Great Britain produces up to 250 flowers each year. Moonwort (Botrychium lunaria) 70-80 plants, Hair sedge (Carex capillaris) and Alpine cinquefoil (Potentilla cranzii). As some of these species are protected by law problems do arise when it comes to grass cutting - bare soil!

Weather conditions at this height can be very extreme - the last 4 years average rainfall has been 68 inches, recorded windspeeds of over 50 knots and gusts of 60 - 70 - 80 mph have occurred on many occasions. The average wind speed for January '83 was 27 mph!

Sunny windless days are a rarity and much appreciated. The winter months bring further problems when the snow comes. The road becomes blocked and not even a Land Rover can make it. Access is then by cross country skis, sometimes a 5 mile round trip.

When the station is eventually reached it becomes a case of hunt the instruments. One steps over the gate and proceeds to dig. All the soil thermometers are in small snow hollows with steps cut in the snow to enable them to be read. The rain gauge is the biggest headache and has to be continually dug out. The slightest wind produces drifting snow and drifts appear in all shapes and sizes depending on the wind direction.

On many occasions I have had to go down on my knees to read the thermometers in the Stevenson Screen because of the drifts. In one corner of the station I have a small hut just big enough to squeeze into on bad days to enjoy a cup of coffee. On several occasions the station has been the hay store with neighbouring sheep huddled together waiting for me to feed them.

Then there are those cold (-10 c) sunny days with no wind when the snow is crisp and the visibility and panorama superb. Winters with snow cover last usually 6-8 weeks though the 1979 winter lasted for 105 days snow cover, which involved 4-5 miles travel each day on skis.

Throughout the nine years that I have been looking after this station I have had my Border collie dog Rob as a companion through sun and wind, rain, hail and snow, though at 14 years old he is now getting too old to tackle the soft snow.

We are now coming to the end of this winter (dare I say it) with the promise
* of a few sunny days and the return of the summer flowers and moorland birds such as Golden Plover and Curlew and the Red Grouse, always the Red Grouse.

Ian Findlay
Upper Teesdale

* Editor - the above letter was received just too late to include in the last Newsletter.

To the Editor, Observers Newsletter

The Perils of Observing

The circumstances under which the rain measure was accidentally broken were as follows:

> The duty observer, wearing open-toed sandals, stubbed his toe on a hedgehog whilst measuring the rainfall at 2100 hours GMT during darkness. He dropped the measuring cylinder in fright and unfortunately the measure fell on the raingauge and shattered.
>
> (Ed: the above is believed to be a true account)

To the Editor, Observers Newsletter

Dear Sir

On consulting our records, we have discovered an error in the "Run of Wind" column on Metform 3208B. Our returns have been one day out between January 1st 1980 and January 31st 1983. The entry of 183 for 31st December 1979 was double entered, appearing also as the entry for January 1st 1980.

The missing value therefore for January 31st 1983 is 650 not 420 as shown. The recorder responsible was taken out and shot at dawn this morning.

> (Ed: the above can't be true - well, not all of it - names and addresses supplied but suppressed for obvious reasons)

To the Editor:

Extract from one of our Inspector's reports:

> The enclosure cannot be seen from the road and the farmer who owns the field sometimes runs a bull in it. As a consequence, vandalism has not yet proved to be a problem but observers need to be capable of a fair turn of speed !

Wingerworth
Derbyshire

4 April 1983

Dear Editor

SNOWDONIA WEATHER DIARY

With a possibility of good weather my wife and I took off four days for a trip to North Wales from 7th to 10th March last. The four days were mild and very sunny in Central and NE England and based on Porthmadog we didn't see the sun there the whole time.

On Tuesday 8th March we drove into Snowdonia. At Tremadoc stratus had its base at 300 ft. By Beddgelert the ceiling was 1500 ft and at Pen Y Cwryd the peak of Snowdon was pushing through. The scene was set for the day. We went onto Llyn Ogwen and climbed the Carneddau. Throughout Snowdon itself was in and out of thin mist, the Glyders were under a clear sky whilst small cumulus formed over us and trailed north-eastwards towards the North Wales resorts. Bangor appeared to be under stratus whilst from Aber and Llanfairfechan eastwards the cloud broke under the influence of what we thought must be a fohn wind.

At the start of our climb the dry bulb was 5.5°C (by psychrometer) with 84% Rel. Humidity but by 1400 hrs at 3400 feet we got values of Dry bulb 8.7°C, wet bulb 5.4°, and 56% rel. humidity. The wind was south westerly and the remaining small snowfields were abating before our very eyes! Arriving back at Porthmadog we were told it had been cold and misty there all day.

We normally think of our mountains as being cloud manufacturers on the grand scale but our holiday Tuesday tended towards the reverse. How do the foregoing obs. fit in with what would be expected under similar situations of pressure distribution, geography and the time of year?

David Fellowes

PS. I am sure all observers will wish to thank the Office for the latest edition of the Observers Handbook - there's plenty to interest and absorb.

Editor

Comment from Mr T R Spalding, our mountaineering expert was as follows:

On 8 March 1983, a ridge of high pressure extended NW from an anticyclone centred over Belgium. The air was moist in the lower layers and there was extensive low cloud on west-facing coasts. Inland, solar heating slowly caused the stratus base to rise and eventually disperse.

## WEATHER IN THE UNITED KINGDOM JANUARY - JUNE 1983

Persistent and often strong winds from a westerly point resulted in January being one of the mildest this century. Maxima of 14.9 C were recorded at Greenwich on the 4th, Bude in Devon on the 26th and Mepal in Cambridgeshire on the 27th. Western areas were generally dull and wet while sheltered eastern parts were sunny and dry. Nevertheless snow occurred on a number of occasions, mainly in the north, although falls were mostly slight and soon melted. Early in February the weather became colder as winds veered to a northerly direction, bringing snow showers to most places by the 7th. During the next few days snowfall was heavy in some eastern areas, particularly in Kent. It then became mainly dry and, at times, sunny with cold easterly winds and night frost. But the last six days of the month were milder with some rain. The generally mild weather was maintained for almost three weeks into March, but after a wet start it became mostly dry with some warm sunshine, especially in the east; on the 17th the temperature rose to 17.0 C at East Bergholt in Suffolk. Around mid-month the weather turned unsettled and from the 21st it was much colder too with wintry showers and strong winds at times. Fresh snow cover was established over northern hills. Rainfall was above average generally for March for the eighth consecutive year over Scotland and Northern Ireland and for the seventh in England and Wales although much of the south had less rain than usual.

The cold, unsettled weather continued for much of April, but for two days in mid-month the south and east of England were warm and sunny, with maxima of 19.5 C in London at Enfield and Kew Gardens on the 16th, while temperatures were generally near normal during the last week. Frost occurred on a number of occasions although much of it was slight. Wintry showers and some longer periods of sleet or snow occurred at times, especially during the first week. Snow lay briefly in some south-eastern areas on the 3rd and in many central and northern areas on the 4th, but over northern hills the snow cover persisted throughout the month in places. More than twice the average rainfall was recorded in many central and eastern areas of England, Durham with 102.5 mm having its wettest April since continuous records started in 1885, but much of western Scotland was dry. Small tornadoes were reported near Derby on the 22nd and at Wirksworth in Derbyshire on the 26th. Similar weather continued throughout May with twice the average rainfall falling in some areas, again mainly in central and eastern parts of England while the north-west of Scotland was very dry. It was generally very dull and temperatures remained below average on all but a few days although there was little air frost. Heavy thunderstorms occurred widely on a number of occasions; on the 18th 53.7 mm of rain fell in two hours at Finningley in South Yorkshire while on the 31st 42 mm were recorded in 30 minutes at Jersey Airport.

Funnel clouds were seen at Guernsey Airport on the 5th at Monks Wood in Cambridgeshire on the 18th and at Trowbridge in Wiltshire on the 20th while on the 21st hail, 10 cm deep, was reported near Denham in Buckinghamshire. This century there have been only three wetter Springs (March to May) in England and Wales:- 1947, 1979, and 1981. June brought a marked change to mainly dry weather, but despite some very warm days, the temperature reaching 27.6 C at St Helier in Jersey on the 7th and 26.9 C at Rodney Stoke in Somerset on the 22nd, the month was generally rather cold and

dull. Unusually severe storms, with large hail causing considerable damage in places, affected Jersey and southern counties from Devon to Kent on the 5th and western and northern counties from Cornwall to Northumberland on the 7th. On the first occasion, hailstones 7.5 cm in diameter and 73.8 mm of rain were recorded at Winfrith in Dorset, and on the second occasion hailstones, 5 cm in diameter, fell at Oswestry in Shropshire. Severe thunderstorms also occurred in parts of the south on the 23rd with 63.8 mm of rain falling at Christchurch in Dorset and 62.4 mm at Long Sutton in Hampshire.